AMENDMENTS TO THE CLAIMS

1. (currently amended) An electronic system comprising:

a backplane including a multi-layer circuit board with a plurality of traces and N slots for receiving circuit packs and at least N-1 ~~sets~~ rows of connection points for interconnecting the N slots one-to-the other;

wherein each ~~set of~~ connection ~~points~~ point is located at a point defined by an intersection of a slot X and a row Y, where X and Y are integers;

wherein each row of connection points has a different predetermined relative shift R associated with it, where R is an integer;

wherein a connection point at row Y is connected to another connection point located at row Y and at a slot that is R slots away from itself. ~~comprises a row of connection points and each row of connection points is selected to connect via the plurality of traces to a slot that is a predetermined relative number of slots away from said slot.~~

2. (previously amended) An electronic system comprising:

a backplane including a multi-layer circuit board with a plurality of traces and N slots for receiving circuit packs and at least N-1 sets of connection points for interconnecting the N slots one-to-the other;

wherein each set of connection points is selected to connect via the plurality of traces to a slot that is a predetermined relative number of slots away from said slot

wherein the predetermined relative number of slots away for each set of connection points determines a number of required routing channels for each set of connection points and the predetermined relative number of slots away is assigned to each set of connection points such that adjacent sets of connection points are selected such that one set of the adjacent sets has a maximum number of required routing channels and another set of the adjacent sets has a minimum number of required routing channels.

3. (original) The system of claim 2 wherein the multi-layer circuit board has N divided by 2 plus 1 signal layers.

4. (original) The system of claim 2 wherein the multi-layer circuit board has no more than N divided by 2 plus 1 signal layers.

5. (original) The system of claim 4 wherein the multi-layer circuit board has no vertical routing that is perpendicular to a plane including the sets of connection points.

6. (original) The system of claim 2 wherein an end set of connection points that is directly adjacent to only one other set of connection points is assigned a predetermined relative number of slots away equal to N divided by 2.

7. (original) The system of claim 6 wherein another end set of connection points that is directly adjacent to only one other set of connection points is assigned a predetermined relative number of slots away equal to N divided by 2 plus 1.

8. (original) The system of claim 7 wherein a set of connection points near a midpoint of the at least N-1 sets of connection points is assigned a predetermined relative number of slots away equal to 1.

9. (currently amended) The system of claim 1 wherein the different predetermined relative shift R ~~number of slots away for each set of connection points~~ determines a number of required routing channels for each ~~set~~ row of connection points and the different predetermined ~~number of~~ relative ~~slots~~ shift R ~~is assigned to~~associated with each ~~set~~ row of connection points is such that

adjacent ~~sets~~ rows of connection points are selected such that an available number of routing channels is not exceeded and the multi-layer circuit board has no more than N/2+1 layers, where N is an even integer.

10. (original) The system of claim 1 wherein the backplane has an interconnect topology that is a full mesh for N slots.

11. (original) The system of claim 1 further comprising at least one circuit pack in the N slots, where the at least one circuit pack uses its slot position and a table of relative shifts to determine a physical port to communicate with another circuit pack in the N slots.

12. (original) The system of claim 2 wherein each routing channel accommodates one differential pair of signals.

13. (currently amended) A multi-layered circuit board for use in an electronic system comprising:

a plurality of traces for making electrical connections;

N slots for receiving circuit packs;

N-1 rows of connection points for interconnecting the N slots one to the other using the plurality of traces;

wherein each connection point is located at a slot X and a row Y, where X is an integer from 1 to N and Y is an integer from 1 to N-1;

wherein each row of connection points is assigned a predetermined relative shift R, where R is an integer from 1 to N-1; and

wherein each connection point that shares a row Y is connected to another connection point that is at row Y and is a distance of R slots from itself.

~~wherein each row of connection points is selected to connect a circuit pack in a slot to a slot that is a predetermined relative shift from said circuit pack.~~

14. (currently amended) The ~~system~~ multi-layered circuit board of claim 13 wherein the predetermined relative shift R for each row of connection points determines a number of required routing channels for each row of connection points and the predetermined relative shift R is assigned to each row of connection points such that adjacent rows of connection points are selected such that one row of the adjacent rows has a maximum number of required routing channels and another row of the adjacent sets has a minimum number of required routing channels.

15. (new) The multi-layered circuit board of claim 13 wherein each connection point comprises a differential pair of connections.